

CLAIMS

1. Device (100) for processing a signal (i) derived from a particle detector (1), said device comprising an integrator (2) for measuring the total charge transported by a signal ( $i_2$ ) feeding said integrator (2) for a predetermined time interval, characterized in that it further comprises a unit (5) for reducing a fluctuating component of the background noise present in said signal (i) and for producing said signal ( $i_2$ ).

2. Signal processing device according to claim 1, characterized in that said unit (5) comprises:

- a converter (6) for associating with an input current an output voltage (e), followed by

- a threshold trigger (7) for allowing current to pass when said voltage (e) exceeds a first predetermined threshold value ( $\epsilon_1$ ) and for preventing current from passing when the voltage (e) falls below a second predetermined threshold value ( $\epsilon_2$ ), followed by

- a converter (9) for associating an input voltage with an output current.

3. Signal processing device according to claim 2, characterized in that said converter (6) comprises an amplifier  $A_1$  in parallel with a resistor  $R_1$ .

4. Signal processing device according to claim 2, characterized in that said threshold trigger (7) comprises a comparator.

5. Signal processing device according to claim 2, characterized in that said converter (9) comprises a resistor  $R_2$ .

6. Device for processing signals produced by a set of particle detectors, characterized in that at least one of these signals is processed by means of a device according to any one of claims 1 to 5.

7. Signal processing device according to any of claims 1 to 6, characterized in that said particles are

photons.

8. Radiology apparatus characterized in that it comprises a device according to any one of claims 1 to 7.

5 9. Imaging apparatus characterized in that it comprises a device according to any one of claims 1 to 7.

10. Fluoroscopy apparatus characterized in that it comprises a device according to any one of claims 1 to 7.